Jan 17th, 12:00 AM

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Electronic Human Resource Management: A Literature Analysis of Drivers, Challenges, and Consequences

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Abstract. There have been significant changes in how human resources (HR) are managed in the last decade. Electronic Human Resource Management (e-HRM) systems are implemented to support the HR organization digitally. However, e-HRM projects fail frequently. This requires attention as e-HRM systems are essential for organizations to drive the digitalization of HR and thereby ensure competitiveness. The reasons for project failure are unclearly defined project drivers and improperly handled challenges. Furthermore, the consequences of e-HRM are often not well understood and communicated. Therefore, we assume a lack of comprehensive understanding of drivers, challenges, and consequences of e-HRM concerning the organization and the individual. Thus, we analyze the last ten years of e-HRM research and use a structured way to identify eleven drivers, twelve challenges, and twenty consequences of e-HRM. We cluster these findings in an e-HRM synthesis and contribute to e-HRM research by providing avenues for future research on e-HRM success.

Keywords: e-HRM, Human Resource Digitalization, Literature Review

1 Introduction

Recent developments elevate the necessity to review the way human resources (HR) are managed. Those developments include the global demographic change [1, 2] leading to a workforce with different demands, and the Covid-19 pandemic accelerates digitalization [3]. Many organizations implement digitalization strategies in various business processes, including the HR process, where electronic human resource management (e-HRM) systems are introduced. The HR process has long been treated as a support process that does not contribute to the organization's critical success. In contrast to other departments like marketing or controlling, HR departments are comparable less digitized [4]. However, organizations recently recognized the enormous potential to digitalize the HR process [5]. Organizations start e-HRM projects that aim to replace isolated HR applications, e.g., payroll management in Microsoft Excel with integrated e-HRM systems, to compete in the war for talents [6].

However, e-HRM projects tend to frequently fail [7]. A study shows that only 7% of the failed e-HRM projects happened because of technical issues. Most failures occurred due to unclear project drivers, poor communication to the workforce or stakeholders, poor project management, and challenges during the transition [8]. As

firms tend to have a limited view of their specific e-HRM use case, they lack a comprehensive understanding of e-HRM during the digitalization of HR processes. To build up this comprehensive understanding, it is first essential to recognize the drivers of e-HRM. Drivers are those circumstances that intensify the need to use e-HRM, e.g., demographic changes [3] or the influence of the Covid-19 pandemic on digitalization. Second, e-HRM implementations are challenged by inevitable technical, individual, and organizational disruptions. One practical indication outlines the necessity of alignment between IT resources and human resources, as an absence of alignment induces the risk of not meeting the firm's strategic goals [1]. Third, previous studies show that implementing specific e-HRM solutions can lead to several consequences, which are possible positive and negative outcomes for individuals and organizations. For example, e-HRM increases service quality and leads to cost reduction [9], decreased job satisfaction, poor e-HRM system quality, and increased fluctuations [10]. Hence, we lack a coherent understanding of what drives organizations to implement e-HRM, what challenges organizations and their employees face when using e-HRM, and what consequences e-HRM brings for them. A coherent understanding of such drivers, challenges, and consequences of e-HRM is needed to reduce project failure. So, the research question of this paper is: *What are the drivers, challenges, and consequences of e-HRM?*

The current studies either focus on drivers, challenges, or consequences of e-HRM [11, 12] and are often limited to specific e-HRM systems, e.g., e-recruiting. On the other hand, research demands an e-HRM synthesis that summarizes the actual status of e-HRM research [13, 14]. This is needed for practitioners to evaluate e-HRM implementations regarding their organizational, technical, and individual influence. Researchers, on the other hand, receive future research avenues alongside our key findings. The remainder of this paper is structured as follows. The following section describes the background of this research and defines e-HRM. Following the research methodology is presented. We then summarize the literature review results and synthesize e-HRM, including drivers, challenges, and consequences. Finally, the paper concludes with a discussion of the results and implications for research.

2 Research background

e-HRM: Once just a technology that supports the HR function, e-HRM journeys to an entire collection of best practices supported by various tools. Early research considers e-HRM as a possibility to implement HR strategies using web technologies [15]. Thereby, e-HRM covers systems that support various HR functions. The operative HR function uses e-payroll or e-time management, whereby relational HR is supported by e-manager support systems or ex-employee support systems [16, 17]. Finally, e-HRM systems such as e-recruitment, e-compensation, or e-training [16, 17] support transformational HR functions. The outlined examples of e-HRM systems supporting various HR functions reflect the variety of e-HRM. Based on those previous understandings of e-HRM, we consider e-HRM as *systems that support operative, relational and transformational HR functions.*

Drivers, challenges, and consequences: All e-HRM systems and implementation projects are influenced by specific drivers that face different challenges and lead to various consequences [7, 17]. Thereby drivers are those circumstances that intensify the need to use e-HRM, e.g., demographic changes [3] or delineate organizational goals, e.g., cost savings [7]. Understanding the *drivers* supports the understanding of e-HRM implementation decisions taken by organizations. Outlining the possible *challenges* assists in early considering of possible scenarios disrupting e-HRM implementations. Finally, an understanding of *the consequences* of e-HRM supports generating a general understanding of possible positive and negative outcomes of e-HRM. Therefore, understanding e-HRM and its influence on organizations and individuals requires consideration of e-HRM drivers, challenges, and consequences.

Organizational, individual, and technical: The organization mainly drives E-HRM implementation decisions [10, 18]. On the contrary, the challenges that tackle e-HRM implementations and the consequences of e-HRM usage affect the organization and technical aspects [19, 20] and the individual [3, 13]. Therefore, providing a comprehensive understanding of e-HRM requires the inclusion of organizational, technical, and individual aspects.

3 Methodology

We follow a grounded-theory-based literature approach to identify drivers, challenges, and consequences of e-HRM based on previously published papers [21]. The methodology of grounded-theory suits our research question as it supports a more integrated and fruitful theory emergence [21]. This will facilitate a structured understanding and a new holistic perspective on e-HRM. Recent reviews that provide an overview of a specific research field have widely used this methodology [22–25]. Therefore, we select and review papers dealing with e-HRM unveiling different drivers, challenges, and consequences of e-HRM. The methodology is conducted alongside five steps: *define, search, select, analyze*, and *present* [21, 24]. The remainder of this section describes the first four steps. The final step, *present*, is part of section 4.

In the *define* step, we appoint appropriate sources, select suiting search terms and define the inclusion criteria for the literature [21]. As literature sources, we select the AIS Senior Scholars' Basket journals as they reflect the top-ranked journals in IS research. To broaden the research results, we also select those journals from the '50 Journals used in FT Research Rank' [26] that belong to the subject areas 'HR' and 'Operations & IS' as they offer a range of case studies undertaken in the research field of e-HRM. In addition, we select respected and highly ranked journals in IS or HR disciplines [27] as they provide an economic perspective. Finally, we also select proceedings from ICIS, ECIS, and HICSS.

The inclusion criteria are defined in this first step. We decide that we only include articles that focus on e-HRM concerning the definition of e-HRM and investigate on [28]drivers, challenges, and consequences of e-HRM. In addition, we decide that the articles must not be older than January 2013. This timeframe is chosen to cover the last decade as digitalization of e-HRM was not very frequent earlier [5]. As it needs two

years of maturity until an e-HRM reaches a fruitful research zone [18], we subtract these two years from the defined research timeframe. The articles must include at least one of the keywords 'HRM Systems', 'HR Digitalization', 'eHRM' or 'E-HRM' in the title, abstract, or keyword fields.

In the *search* step, we search the 45 journals and proceedings resulting from the define step using the defined keywords and timeframe. The search is executed on the website of each journal separately. In total, our search delivers 277 articles.

In the *select* step, we screen the abstracts of the searched 277 articles thoughtfully for hints on drivers, challenges, and consequences of HRM. If the abstracts provide those hints, we then also review the full texts. Only results are included in the final selection if they match the defined inclusion criteria from the define step [21]. To do so, we remove results if they do not deal with drivers, challenges, and consequences of e-HRM but only HRM as a process independent from any technology used. This explained most of the removals. We again eliminated those results that do not reference any driver, challenge, or consequence in the full text. This leads to 15 selected articles.

In the *analyze* step we make use of our earlier provided definition of e-HRM outlined in the former section. We analyze if the selected literature focuses on one of the e-HRM systems covered by our definition of e-HRM. Finally, we review the selected literature for the three categories *driver, challenge*, and *consequence of e-HRM*. Whenever an article refers to or empirically investigates one of these categories, we check if we have already found this finding. If so, we note the source of the finding as further reference. If not, we open a new finding. Furthermore, we decide if the finding effects the organizational, individual, or technical level. Applying this coding process, a list of findings is generated that can be ordered based on several references. In doing so, we highlight those findings that are relevant in research. The results will be presented in the next section.

4 Results

4.1 Drivers of e-HRM

The most referenced driver of e-HRM is the intention to **make the HR functions more strategic**. A more strategic-oriented HR can act as a worthful business partner [30] for other functions. Furthermore, a strategically oriented HR department is needed to ensure a company's long-term success [13] and foster the implementation of strategic HR management [1]. The second most referenced driver of e-HRM is the goal to **improve HR operational performance**. By implementing e-HRM systems, firms want to ease the operational work, e.g., payroll processing [19] for their HR staff. As a result, HR can finish their operational work faster, move their attention to more strategic tasks, and drive operational efficiency [3]. **Digitalization** plays an essential role in driving e-HRM. Supporting HR with state-of-the-art technology [11] like e-recruiting or e-social media solutions is critical to reach the right audience and perform better in strategic HR Management [1]. **Cost savings** summarize all savings reachable when implementing e-HRM. This covers the reduction of transactional costs [9, 18] but

also savings due to the reduction of HR headcount [18], leading to higher financial performance over time [13]. **Improving the overall company performance** is another driver of e-HRM. Overall company performance references a company's ability to react to a changing environment fast [1] and their openness to applying state-of-the-art technologies [11]. The ongoing **globalization** drives the need for e-HRM solutions. Organizations work in subsidiaries across the globe, incorporating different local policies and ethical values [20] in their HR processes. In addition, due to global interaction, the competitive markets are closer than ever, enforcing to ongoing evolute the HR function [18]. By implementing e-HRM, firms want to **improve the employees' working conditions**. To do so, organizations can, e.g., provide more transparent talent management applications or provide solutions for virtual teamwork [30]. Finally, improving the working conditions can increase job satisfaction [9]. Another driver of e-HRM is **improving talent management and winning the "Talent War"**. In times of limited labor staff and companies competing for resources, intelligent e-recruiting systems can support finding the right resources [11]. Once found, e-HRM supports employee development, motivation, and empowerment and thus ensures employee retaining [1]. With the **New Work movement and the influence of Covid-19** on formerly existing working procedures, firms see another driver of e-HRM. The changing nature of jobs [30] and the increasing importance of virtual teams and telework [3] drive the need to provide flexible working solutions to stay competitive in the labor market. Implementing e-HRM solutions is also driven by the goal to **improve internal and external communication**. Thereby, the internal communication between HR and employees or managers and employees shall be fostered [2]. Also, communication to external stakeholders can be improved using e-social media [30]. Finally, the changes in **demography** drive the role of e-HRM. Companies have to react to an aging workforce [1] using solutions to develop their staff strategically. The older workforce demands workplace flexibility, but firms also have to meet the expectations of millennials and Generation Z [3].

4.2   Challenges of e-HRM

Especially when introducing e-HRM, the biggest challenge is commonly **handling user acceptance, resistance to change, and people of every age**. Every change also e-HRM and its influence on employees' tasks can lead to resistance to change [20]. Especially if the system is not perfectly fitting the functional or design requirements of the employees, this can cause a lack of user acceptance [19, 20]. As human behavioral research shows, also age plays a role in accepting change and adopting new technologies [19]. This challenges a firm to actively drive change management to reach broad user acceptance within the entire workforce. When applying e-HRM practices, firms must **ensure end-user support** to reach system acceptance and operability. This includes training [7, 20] and a helpdesk [14] before the start of usage and during the lifecycle of such a system. Unlike other organizational units, **HR departments do hard in adopting new technologies** [3, 10]. This is a challenge as the implementation of e-HRM causes tremendous changes in the competencies required of HR staff [2]. A firm has a business strategy with no strong orientation towards innovation, which will

endanger e-HRM implementations [13]. Therefore **e-HRM activities must fit the business strategy**. Organizations usually define specific business goals they need to analyze if aimed e-HRM implementations support this strategy [7] (e.g., outsourcing). Additionally, **e-HRM must fit the company, culture, country, and regulatory**. This includes aspects of processes that are handled globally [20] and cultural norms that influence employees' respond to e-HRM systems [12]. Furthermore, this covers all regulatory and policies [18, 20] that must be followed when applying e-HRM. When implementing e-HRM, firms must **make the technology work and ensure IT skills** are available. Successful e-HRM projects depend on the availability of specialized HR and IT skills [13]. Technical accountability (availability and compatibility to legacy systems) is crucial for the success of an e-HRM system [20]. **e-HRM must fit the HR strategy and practices**. A good e-HRM system must support the organizational workflow and enable the employees to carry out HR activities more efficiently [12]. Even the best system cannot be successful if it does not contain data relevant for the processor does not support the HR practice of a specific organization [14]. Therefore, e-HRM must fit the HR strategy and practices. To successfully implement e-HRM requires **executive-level support**. Only if the technology and connected practices are supported top-down they can reach the aimed advantages [20]. The probability of getting executive-level support is higher if e-HRM implementations coincide with managerial interests [18]. To conduct a successful e-HRM introduction, firms need to **drive the focus shift in the HR department actively**. Especially as those changes often lead to a change in HR tasks and roles [10], the HR staff needs to be guided through such a process. Furthermore, e-HRM projects must deal with the challenge of **unforeseen cost increase**. This can be caused by insufficient resources or long implementation phases that lower the return on investment [20] or unforeseen costs during adoption [7]. In addition, **e-HRM applications must fit and integrate**. Without proper connections between systems, data cannot be shared efficiently. e-HRM solutions need compatibility with legacy systems if they overtake or exchange data [20]. Finally, **data quality and data privacy** need to be ensured when e-HRM practices cover HR functions. E-HRM systems need to provide high levels of data quality to be accepted [14]. Ultimately data privacy is vital if employees shall trust these HR applications [7].

4.3   Consequences of e-HRM

Improved HRM services is the top-ranked consequence of e-HRM. Thereby improved means that HR processes become faster and easier to execute [3, 12]. Furthermore, e-HRM supports HRM services to be more distinctive and consistent [14]. Furthermore, the implementation of e-HRM solutions can lead to **cost reduction**. Recruiting costs can be lowered by e-recruiting [13], and personnel costs can be saved by ensuring that employees, managers, and HR staff can work on higher-value tasks [9]. When e-HRM practices are applied, a firm can create a **stronger position of their HR department**. When HR services become easier and faster, employees show a higher service satisfaction with the HR department [7]. In addition, the HR staff can focus on more strategic tasks and thus influence the strategic HR outcomes of the organization [1]. In

addition, **fewer administrative tasks** can be expected when e-HRM is applied. The daily administrative functions get supported [13], and some processes like access control or time management [16] can be automated or moved into a self-service [30]. E-HRM also provides **support for managers**, e.g., during recruiting, where e-HRM systems can support the selection and decision process [1]. Also, when controlling the personnel costs, managers can be supported by e-HRM solutions [9] like e-payroll or specific e-manager support systems. Furthermore, e-HRM supports **higher overall company performance and competitiveness**. Firms can support their company performance by using e-HRM solutions to hire and retain the best available person [7] and ensure HR staff has time to support the organization's development [14]. Thereby, being successful in the workforce market and applying state-of-the-art technologies positively influences competitiveness [1, 12]. Using electronic solutions, the data collection is streamlined by a uniform format [7], leading to **better data**. The collected data is available where needed and can be shared across organizations [20]. In addition, the possibility to combine specific data sets allows a more strategic use of data (e.g., employee performance, time management, career management) [2]. **Improved relationships between employees, HR, and the organization** can also be a consequence of e-HRM. The HR staff has more time to focus on relational tasks like career planning or performance management together with the employee [7, 30]. In the same way, HR staff is freed up from operational work to support the organization's strategic development [18]. In addition, e-HRM leads to **higher employee satisfaction and less fluctuation**. Suppose employees value the e-HRM systems and the entire HR role as beneficial. In that case, this is positively correlated with employee commitment, greater employee satisfaction, and lesser intent to quit [1, 9]. Another consequence of e-HRM is the support for hiring and developing **more qualified and diverse employees**. Using Artificial Intelligence, for example, can lower the influence of bias on hiring [3] and e-training systems support the development of the workforce [20]. **Missing user acceptance** can be rated as a pitfall of e-HRM. Especially when an e-HRM system does not work properly or does not fit the processes, it can be hard to get user acceptance [7, 20]. While an increase in diversity is one of the drivers of e-HRM, some studies prove **no strong positive effect on diversity goals** when using e-HRM. Diversity goals might be limited as minorities especially favor usage of e-recruiting less [30], and biases might persist if machines learn from human behavior [3]. In addition, the usage of e-HRM can lead to a **lack of personal connection**. E-training systems are not as effective as real learning, and virtual interviews may not always be effective because they do not include rich information like body language [30]. **Reduction of HR headcount and enabling of outsourcing** can be another consequence of e-HRM. When HR processes are moved into self-service, this not only allows for focusing HR on more strategic topics but also reduces HR headcount [14, 18]. HR process delivery centralizes service centers or prepares to outsource operational HR [7] entirely. Using e-HRM solutions additionally creates more room for **flexibility**. E-Learning solutions or applications that allow for remote work support the workforces who wish for more flexibility in time and place [13, 30]. Furthermore, e-HRM solutions allow for more **transparency**. For example, e-recruitment can provide transparent talent acquisition, especially in the internal labor market [7]. Adding to that,

high levels of data privacy regulations are a demand of e-HRM. With the numerous data they keep, e-HRM systems can invade personal privacy [31]. Without a data privacy concept, threats to data privacy can endanger the user acceptance of e-HRM and the overall company reputation [19, 20]. In contrast to the high-ranked consequence of cost reduction, other studies unveiled that the usage of e-HRM solutions can lead to **higher administrative and transaction costs**. For example, when using e-recruiting, firms might have to handle more applications and therefore have higher personnel costs [7]. Another consequence of e-HRM usage might be **a missing system fit to process**. As e-HRM systems often require standardized processes, it might be hard to reach system fit to process. HR processes are not seldom customized locally to fit country or company regulations [20]. To conduct the needed process, systems must be adapted, which creates additional effort if anyhow possible [3]. Finally, the usage of e-HRM solutions might lead to a **dependency on the used technology or the responsible vendor**. If the system is not available, HR processes might not be executable [20]. In case the system maintenance is outsourced, the successful handling of operational HR is in the hand of an external vendor [7].

5   Synthesis of Results

We developed a conceptual synthesis based on the results of the literature review. Therefore, we differentiate whether the identified drivers, challenges, and consequences of implementing e-HRM are organizational, individual, or technical (Table 1).

As the results show, the consequences of e-HRM are either positive or negative. Based on the synthesis, we identified research highlights. As research highlights, we define the three drivers, challenges, positive and negative consequences studied by most of the identified literature and thus might have a strong influence on project failure (Table 1). Organizations have to incorporate these aspects when planning and to execute e-HRM implementation projects to avoid project failure. Furthermore, we derive theoretical implications and encourage research to uncover any missing aspects and provide avenues to overcome project failure.

Research highlight 1: Drivers of e-HRM are organizational. The synthesis indicates that making the HR function more strategic (9 references), improved HR operational performance (8 references) and digitalization (7 references) are the main drivers of e-HRM (Table 1). All of them have in common that they explain the need why organizations prefer implementing e-HRM systems. This indicates that most e-HRM implementations are not driven based on individual expectations or technical needs but organizational aims. Therefore, firms have to evaluate how they can reach these organizational aims by applying methods, processes, or tools on the technical and individual levels. Some research indicates that shifting HR tasks from being administrative to becoming strategically relevant is necessary [18] to make the HR function more strategic [25]. Furthermore, improving HR operational performance can be reached by automizing tasks using e-HRM systems [11]. Thereby, digitalization as an essential driver of e-HRM is supported by preferred usage of state-of-the-art

technology [11], such as e-social media [1], Artificial Intelligence [3], or Gamification of e-HRM used for recruiting [32].

Research highlight 2: Challenges of e-HRM are individual. The synthesis also shows that handling user acceptance, resistance to change and people of every age (11 references), ensuring user support (10 references) and HR departments doing hard in adopting new technologies (7 references) are the main challenges of e-HRM as prior research identifies (Table 1). These results show that not mainly the organization or technology, but each employee is challenged by e-HRM implementations. This has reasons for how human beings react to changes in processes and technology that they regularly use [33]. Thereby, there are differences in human reaction based on gender, age, education, or origin [7, 19]. This implies that firms have to incorporate knowledge about human behavior and technology adaption when implementing e-HRM systems. Early research indicates that e-HRM projects are challenged by aligning system demands of older employees with those from the younger generations of employees [19]. Some studies even indicate that especially people working in HR departments have a lower technology affinity and therefore do harder or need more training to adapt to new technologies [7].

Research highlight 3: Positive consequences of e-HRM influence the organizational level. The ma**jor** positive consequences outlined by the synthesis are improved HRM services (13 references), cost reduction (10 references), and a stronger position of HR (9 references), as shown in Table 1. All of these positive consequences have in common that they occur on the organizational level and thereby improve the firm's overall performance. This indicates that firms have to identify specific measures that support the achievement and intensification of these positive consequences. Some research indicates that e-HRM can improve service quality by making the HR processes more distinctive and consistent and thus increasing their efficiency [14]. Cost reduction can be reached by reducing HR headcount [14] or decreasing training costs by providing e-training possibilities [30]. Other research indicates that the e-HRM caused a stronger HR position by reducing the administrative burden on the HR function [18]. Furthermore, e-HRM decreases operational efforts in HR [13] and thereby shifts HR from being administrative to being strategically relevant [18].

Research highlight 4: Negative consequences of e-HRM influence the individual level. The main negative consequences outlined by the synthesis are missing user acceptance (4 references), no substantial positive effect on diversity goals (4 references), and lack of personal connection (4 references), as shown in Table 1. While the positive consequences of e-HRM implementations occur on the organizational level, the negative consequences can be expected on the individual level and thereby challenge employee satisfaction. This implies that firms have to identify methods to minimize the negative consequences as much as possible. Therefore, they must understand the cause of these negative consequences to mitigate them as early as possible during e-HRM implementation. By way of example, missing user acceptance can be caused by private concern and data inaccuracy [20] or users' technology adaption behavior [12]. While more diverse recruiting is often announced as the goal of e-HRM systems like e-recruiting, some research proves the opposite. Thereby they reveal that diversity goals might be limited as research found out that minorities favor usage of e-

recruiting less [30]. Other research outlines that e-HRM contributes to the "digital divide" and loss of personal contacts [19]. Furthermore, employees prefer more interactive and interpersonal approaches to all HR management [30].

Table 1. Results and Synthesis

		Organizational			Individual			Technical		
		Terms	References	∑	Terms	References	∑	Terms	References	∑
Drivers		Make the HR function more strategic	**[1–3, 6, 9, 12, 17–19]**	**9**	Improve employees working conditions	[8, 11, 29]	3	Digitalization	[1, 3, 10, 12, 17–19, 29]	8
		Improve HR operational performance	**[1–3, 6, 8, 9, 11, 17]**	**8**	Improve Talent management and Win the "Talent War"	[1, 10, 29]	3			
		Cost Savings	**[2, 3, 6, 8, 12, 17, 29]**	**7**	New Work and Covid-19	[3, 18, 29]	3			
		Improve overall company performance	[1, 9–12]	5	Improve Communication	[2, 29]	2			
		Globalization	[1, 2, 17–19]	5	Demography	[1, 3]	2			
Challenges		e-HRM activities must fit the business strategy	[2, 6, 12, 13, 17, 19]	6	**Handle user acceptance, resistance to change and people of every age**	**[2, 6, 8, 9, 11–13, 17–19, 29]**	**11**	Make technology work and ensure IT skills	[6, 8, 12, 17, 19]	5
		e-HRM must fit the company, culture, country and regulatory	[2, 6, 11, 12, 19]	5	**Ensure user support**	**[2, 3, 6, 9, 12, 13, 17–19, 29]**	**10**	e-HRM applications must fit and integrate with each other	[12, 19]	2
		e-HRM must fit HR strategy and practices	[6, 11, 13, 19]	4	**HR departments do hard in adopting new technologies**	**[1–3, 6, 9, 12, 18]**	**7**	Data Quality and Data Privacy	[6, 13]	2
		Executive level support needed	[6, 13, 17, 19]	4						
		Drive focus shift in HR department actively	[6, 9, 13, 29]	4						
		Unforeseen cost increase	[6, 17, 19]	3						
Consequences	**positive**	**Improved HRM services**	**[2, 3, 6, 8, 10–13, 17–19, 29, 30]**	**13**	Support for manager	[1, 8, 12, 17, 18, 29, 30]	7	Better data	[2, 6, 9, 13, 17, 19]	6
		Cost reduction	**[2, 3, 6, 8, 12, 13, 17, 18, 29, 30]**	**10**	Improved employee-HR-organization relationship	[6, 12, 13, 18, 29]	5			
		Stronger position of HR	**[1, 2, 6, 8, 9, 12, 17, 18, 29]**	**9**	Higher employee satisfaction and less fluctuation	[1, 6, 8, 12]	4			
		Less administrative tasks	[2, 6, 9, 11, 12, 17, 19, 29, 30, 30]	9	More qualified and diverse employees	[1, 8, 12, 29]	4			
		Higher overall company performance and competitiveness	[1, 6, 8, 11–13]	6	More flexibility	[8, 12, 29]	3			
		Reduction of HR headcount and enabling of outsourcing	[6, 9, 13]	3	More transparency	[6, 12]	2			
	negative	Partly higher administrative and transaction costs	[6, 18, 29]	3	**Missing user acceptance**	**[9, 13, 18, 19]**	**4**	Missing system fit to process	[1, 3, 19]	3
		Dependency from technology or vendor	[6, 19]	2	**No strong positive effect on diversity goals**	**[3, 18, 29, 30]**	**4**	High levels of data privacy regulations	[18, 19, 30]	3
					Lack of personal connection	**[2, 6, 18, 29]**	**4**			

Note: (+) positive consequence, (-) negative consequence, ∑= Sum of references, bold letters = research highlight with high impact on avoiding project failure

6 Discussion, Implications, and Limitations

6.1 Theoretical implications

We contribute to e-HRM research by providing research highlights, which summarize the central tenets of what drivers, challenges, and consequences influence e-HRM project failure. We provide a synthesis of e-HRM, offering a baseline for future research and extending the past literature. Our synthesis outlines those aspects that are important to avoid project failure. While we also propose regularly enhancing the synthesis with findings that might occur based on proceeding digitalization [4], we want to encourage consequential research on the research highlights.

Furthermore, we reveal that e-HRM is driven by organizational goals and mainly delivers positive consequences on the organizational level.

On the other hand, we indicate that e-HRM implementation and usage deal with challenges and lead to negative consequences mainly on the individual level. We argue that advantages occur on the organizational level and challenges and disadvantages mainly on the individual level influencing e-HRM project failure.

Furthermore, we propose that future research focuses on how these research highlights can be influenced proactively. We argue that incorporating the knowledge of the research highlights in change management research [34] can provide new insights and empirical evidence on the effect strength of research highlights on e-HRM project outcome. For example, future research should evaluate the correlation between the early implementation of end-users and training effort on user acceptance and project success.

Based on change management research, transformational changes like e-HRM projects demand organizational and individual improvements to be successful [34]. Research can adapt the change management process [34] to the individual aspects of e-HRM. This might imply that e-HRM projects have a more substantial personal component than other IS projects due to their HR relation. Concerning classical change management, this implies different actions in the specific change management steps. For instance, creating a feeling of urgency for e-HRM projects in the first step [34] might be different from hardware or financial system projects as those usually have more calculable benefits.

Summing up, we make five contributions to e-HRM research from an overall perspective: (1) We provide a comprehensive synthesis of drivers, challenges, and consequences of e-HRM. (2) We show that the main drivers and main positive consequences of e-HRM are on an organizational level. (3) We provide evidence that the main challenges and negative consequences of e-HRM are on an individual level. (4) We propose a future research avenue asking for the empirical evidence on the effect strength of identified research highlights on e-HRM project outcome (5) We provide a baseline for research on an e-HRM specific change management process.

6.2 Practical implications

Organizations expect several positive consequences by introducing different e-HRM systems in various HR functions. Thereby they have to proactively mitigate several negative consequences and address multiple challenges. The e-HRM implementations furthermore are driven by various reasons. Whereas organizations mainly drive the implementation decisions, challenges and consequences influence individuals, too. Our results provide firms with valuable insights that, if recognized and translated into actions thoughtfully, can prevent the failure of e-HRM projects. The knowledge about supposable challenges and possible disadvantages mainly occurring on the individual level allows firms to handle and mitigate them proactively. Especially the identified mainly individual challenges and negative consequences allow for perspective and proactive handling during e-HRM projects and e-HRM usage, e.g., by applying best practice change management methods [34].

6.3 Limitations and Future Research

Our research methodology has limitations as the approach to filter out relevant literature has some downsides. By selecting the described set of journals, we automatically deselected other journals that might have provided further insights. However, our literature choices are made with the best intentions to provide a comprehensive e-HRM synthesis by analyzing them in a structured way.

Future research might use this literature review as a starting base to evaluate a synthesized set of drivers, challenges, and consequences of e-HRM. We encourage future researchers to provide results from case studies and drive empirical evidence to create a proven e-HRM change management model by combining existing models. Case studies thereby support data collection that can be used to evaluate e-HRM specific research models.

Future research might identify additional drivers, challenges, and consequences of e-HRM arising because of ongoing digitalization. Especially the usage of Artificial Intelligence (AI) might bring up additional drivers, challenges, and consequences, e.g., ethical or moral implications when using AI during candidate selection. This actual e-HRM literature review can further enhance our synthesis based on new upcoming e-HRM systems promoted by continuing digitalization.

7 Conclusion

This paper provides a comprehensive synthesis of drivers, challenges, and consequences of e-HRM. We unveiled that drivers and positive consequences of e-HRM are mainly on an organizational level. Contrary, challenges and negative consequences mainly affect the individual. In sustaining their competitive position within a digitized and globalized environment, organizations introduce e-HRM solutions. Our e-HRM synthesis and proposed further research can support them in creating a vision of their e-HRM landscape and applying consequence-oriented change management during e-HRM implementations.

References

1. L'Écuyer, F., Fabi, B., Raymond, L., Uwizeyemungu, S.: Strategic alignment of IT and human resources: Testing a mediation model of e-HRM in manufacturing SMEs. Proceedings of the 52nd Hawaii International Conference on System Sciences (2019)
2. Marler, J. H. and Fisher, S. L.: An evidence-based review of e-HRM and strategic human resource management. Human Resource Management Review, 18–36 (2013)
3. Minbaeva, D.: Disrupted HR? Human Resource Management Review (2020)
4. Groß, M. (ed.): Yes, AI Can: The Artificial Intelligence Gold Rush Between Optimistic HR Software Providers, Skeptical HR Managers, and Corporate Ethical Virtues. Springer, Cham (2021)
5. Toader, A.: Digitalisation of the Human Resource Department. 13 (2): 127–39. Scientific Annals of the "Al. I. Cuza" University, Iasi. Sociology & Social Work / Analele Stiintifice Ale Universitatii "Al. I. Cuza" Iasi Sociologie Si Asistenta Sociala, 127–139 (2020)
6. Wehrle, M., Lechler, S., Gracht, H. A. v. d., Hartmann, E.: Digitalization and its Impact on the Future Role of SCM Executives in Talent Management – An International Cross-Industry Delphi Study. J Bus Logist 41, 356–383 (2020)
7. Bondarouk, T., Parry, E., Furtmueller, E.: Electronic HRM- four decades of research on adoption and consequences. The International Journal of Human Resource (2016)
8. Foster, S.: Why e-HR projects fail to deliver business benefits. http://www.legal-island2008.com/NGAHR-Why-eHR-Projects-Fail-To-Beliver-Business-Benefits.pdf
9. Hauff, S., Alewell, D., Hansen, N.K.: HRM System Strength and HRM Target Achievement—Toward a Broader Understanding of HRM Processes. Human Resource Management, 715–729 (2016)
10. Grant, D., Newell, S.: Realizing the strategic potential of e-HRM. Journal of Strategic Information Systems, 187–192 (2013)
11. Bradel, M., Steininger, D. M., Daniel, V.: How can digital start-ups successfully recruit IT professionals? Proceedings of the 27th European Conference on Information Systems (ECIS) (2019)
12. Iqbal, N., Ahmad, M., Allen, M. M. C., Raziq, M. M.: Does e-HRM improve labour productivity? A study of commercial bank workplaces in Pakistan. Employee Relations, 281–297 (2018)
13. Martini, M., Cavenago, D., Marafioti, E.: Exploring types, drivers and outcomes of social e-HRM. Employee Relations, 788–806 (2020)
14. Bondarouk, T., Harms, R., Lepak, D.: Does e-HRM lead to better HRM service? The International Journal of Human Resource (2015)
15. Ruël, H. J. M., Bondarouk, T. V., Looise, J. K.: e-HRM: Innovation or irritation. Explorative empirical study in five large companies on web-based HRM. Management Revue, 364–380 (2004)
16. Strohmeier, S. and Kabst, R. Configurations of e-HRM – an empirical exploration. Employee Relations, 333–353 (2014)
17. Lepak, D.P. and Snell, S.A.: Virtual HR: strategic human resource management in the 21st century. Human Resource Management Review, 215–234 (1998)
18. Marler, J.H. and Parry, E.: Human resource management, strategic involvement and e-HRM technology. The International Journal of Human Resource Management (2015)

19. Strohmeier, D.: HRM in the digital age – digital changes and challenges of the HR profession. Employee Relations (2014)
20. Burbach, R., Royle, T.: Institutional determinants of e-HRM diffusion success. Employee Relations, 354–375 (2014)
21. Wolfswinkel, J. F., E. Furtmueller and C. P. M. Wilderom: Using grounded theory as a method for rigorously reviewing literature. European Journal of Information Systems, 45–55 (2013)
22. Maysami, A. M, Mohammadi Elyasi, G.: Designing the framework of technological entrepreneurship ecosystem: A grounded theory approach in the context of Iran. Technology in Society (2020)
23. Vial, G.: Understanding digital transformation: A review and a research agenda. The Journal of Strategic Information Systems, 118–144 (2019)
24. Grehling, J., Maier, C.: Digital health: A systematic literature review and future research directions. Twenty-Ninth European Conference on Information Systems (ECIS 2021) (2021)
25. Oehlhorn, C. E., Maier, C., Laumer, S., Weitzel, T.: Human resource management and its impact on strategic business-IT alignment: A literature review and avenues for future research. The Journal of Strategic Information Systems (2020)
26. Ormans, L.: 50 Journals used in FT Research Rank. https://www.ft.com/content/3405a512-5cbb-11e1-8f1f-00144feabdc0 (2016)
27. Hennig-Thurau, T., Sattler, H., Dyckhoff, H., Franke, N., Schreyögg, G.: VHB-JOURQUAL3. https://www.vhbonline.org/vhb4you/vhb-jourqual/vhb-jourqual-3/ (2021)
28. Coleman, M.: Why HR projects fail, https://www.unleashgroup.io/2020/12/09/exclusive-why-hr-projects-fail-report-reveals-84-were-unsuccessful/
29. Färber, F., Keim, T., König, W., von Westarp, F., Weitzel, T., and Wendt, O.: Recruiting Trends 2003, https://www.uni-bamberg.de/isdl/chris/recruiting-trends/
30. Stone, D. L., Deadrick, D. L., Lukaszewski, K. M., Johnson, R.: The Influence of Technology on the Future of Human Resource Management. Human Resource Management Review (2015)
31. Stone, D. L. and Dulebohn, J.H.: Emerging issues in theory and research on electronic human resource management (eHRM). Human Resource Management Review 23 (2013) 1–5. Human Resource Management Review, 1–5 (2013)
32. Scholz, T.M.: Gamification & e-HRM. In: Thite, M. (ed.) e-HRM Digital Approaches, Directions and Applications. Routledge (New York) (2018)
33. Bala, H., Venkatesh, V.: Adaptation to Information Technology: A Holistic Nomological Network from Implementation to Job Outcomes. Management Science (2015)
34. Kotter, J.P.: Leading Change: Why Transformation Efforts Fail. IEEE Engineering Management Review (2007)